DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
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11000
Ser 533.VT/080
9 Feb 1998

Defense Technical Information Center
OTIC Customer Service Help Desk (DTIC-BLS)
8725 John J. Kingman Rd, Suite 0944
San Diego, CA 92107

Ladies and Gentlemen:

The enclosed Record of Decision (ROD) for the Santa Margarita River Flood Control Project and Basilone Road Bridge Replacement for Marine Corps Base, Camp Pendleton, California is provided for your records.

The ROD will appear in the Federal Register on Feb. 12, 1998. Our point of contact is Ms. Vicky Taylor, who may be reached at (619) 532-3007, at the following address:

Southwest Division, Naval Facilities Engineering Command
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Sincerely,

Vicky K. Taylor

VICKY K. TAYLOR
By direction

Encl:
(1) ROD (1 copy)

Copy to:
Commanding General, Marine Corps Base
Attn: AC/S, ES (Dr. Richard Kramer)
Camp Pendleton, CA 92055

Commanding General, Marine Corps Base
Attn: AC/S, PWO (Mr. Sal Simonetti)
Camp Pendleton, CA 92055

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
2 NAVY ANNEX
WASHINGTON, DC 20380-1775

IN REPLY REFER TO:
5090
LFL/1
06 FEB 1998

From: Commandant of the Marine Corps
To: Commanding General, Marine Corps Base, Camp Pendleton, CA 92055

Subj: RECORD OF DECISION FOR THE SANTA MARGARITA RIVER FLOOD CONTROL PROJECT AND BASILONE ROAD BRIDGE REPLACEMENT PROJECT AT MARINE CORPS BASE, CAMP PENDLETON, CALIFORNIA

Encl: (1) Record Of Decision

1. The enclosure has been executed by the Deputy Assistant Secretary of the Navy (Installations and Facilities), and will be published in the Federal Register by 13 February 1998. Accordingly, it is considered that, with implementation of the following paragraph, compliance with the National Environmental Policy Act for the action has been effected.

2. The Council on Environmental Quality regulations requires public notification of the Record Of Decision. The enclosure is provided for your use in implementing this requirement and should be published in local newspapers and mailed to any interested parties. Please provide verification of local publication to CMC(LFL) upon implementation.

3. Questions regarding the enclosure may be directed to Mr. Jim Omans, Head, Natural Resources Section, at DSN 226-0865 or (703) 696-0865.

L. L. Larson

L.L. LARSON
BY DIRECTION

Copy to:
SOUTHWESTNAVFACENGCOM

DEPARTMENT OF DEFENSE
Department of the Navy

Record Of Decision for the Santa Margarita River Flood Control Project and Basilone Road Bridge Replacement Project at Marine Corps Base Camp Pendleton, California

Pursuant to Section 102(c) of the National Environmental Policy Act (NEPA) of 1969, and the Council on Environmental Quality Regulations (40 CFR 1500-1508), the Department of the Navy announces its decision to construct a 14,500 foot-long levee and a 2,300 foot floodwall combination and associated stormwater management system and a replacement Basilone Road Bridge at Marine Corps Base (MCB) Camp Pendleton, California. The Environmental Impact Statement (EIS) for these projects was prepared jointly by the Department of the Navy and Army Corps of Engineers. In addition, the U.S. Fish and Wildlife Service and the San Diego Regional Water Quality Control Board served as cooperating agencies during the analysis of potential impacts to the environment that may occur during construction, operation and maintenance of these projects.

PROPOSED ACTION

The Proposed Action consists of construction of a flood control structure (a levee) at MCB Camp Pendleton to provide protection to Marine Corps Air Station (MCAS) Camp Pendleton, the Chappo Area, Sewage Treatment Plant (STP) 3, and the Santa Margarita Ranch House complex from a flood event of up to 100 years in magnitude; a stormwater management system to direct runoff from MCAS Camp Pendleton and the Chappo Area into the Santa Margarita River without creating a flood hazard; and replacement of a north-south circulation route across the Santa Margarita River at or in the vicinity of Basilone Road and Vandegrift Boulevard. The flood control structure would consist of a 14,500-foot-long levee and a 2,300-foot floodwall combination extending from STP 3 to just upstream of the Santa Margarita Ranch House complex. With this alignment, minimum airfield safety distances along the length of MCAS Camp Pendleton would be maintained. The alignment would transition sharply to run parallel to Vandegrift Boulevard downstream of the airfield for approximately 2,300 feet, and finally would be aligned to bulge out and around STP 3. The structure type would change from earthen levee to a floodwall along the 2,300-foot run parallel to Vandegrift Boulevard. This alignment would also include an upstream guide vane to the main

levee. This vane would improve the hydraulics of the levee structure with respect to the impinging flow, and significantly reduce scour depths at the upstream end of the levee and the need for revetment protection.

The stormwater management system would drain surface runoff that becomes trapped behind the flood control structure. The system would have the capacity to manage runoff from approximately 2,100 acres, including MCAS Camp Pendleton and the Chappo Area. The collected stormwater would be pumped back into the river. The system would be designed to manage a storm event with a duration of up to 24 hours and a recurrence interval of up to 100 years. The Basilone Road Bridge replacement project would involve construction of a 1,155 foot long, two-lane bridge over the Santa Margarita River. The bridge would be constructed to meet engineering standards for transporting military loads, as well as providing surface transportation for other users. The new bridge would allow water flow to pass safely underneath the bridge during a 100-year flood event. Rifle Range Road would be used for temporary access during project construction. In preparation for this use, a ten foot corridor on either side of the road would be maintained free of vegetation and the road would be resurfaced. Upon completion of project construction, Rifle Range Road would be removed and the area restored to the natural river condition.

PURPOSE AND NEED

The basic project purposes for the proposed action are:

1. To provide protection for all U.S. Marine Corps assets within the limit of the 100-year floodplain of the Santa Margarita River, including the entire MCAS Camp Pendleton.

2. To provide a permanent, all-weather crossing over the Santa Margarita River in the southeast portion of MCB Camp Pendleton.

MCB Camp Pendleton and MCAS Camp Pendleton maintain and operate facilities and provide services to support operations of aviation activities and units of operational forces of the Marine Corps. MCB Camp Pendleton is the only west coast Marine Corps installation where a comprehensive air, sea, and ground assault training scenario can be executed; therefore, its ability to operate is considered to be of paramount importance to national security. Facilities and operations in the portion of MCB Camp

Pendleton adjacent to the Santa Margarita River are located in the 100-year floodplain for the river.

Heavy rainfall in 1993 resulted in the flooding of MCAS Camp Pendleton, portions of MCB Camp Pendleton, and destruction of the Basilone Road Bridge. The readiness and ability to support the missions of MCB Camp Pendleton and MCAS Camp Pendleton were seriously jeopardized because of the flooding and resulting damage. The flood damage caused operations to cease in the flood damaged areas and reduced the ability of the installation to perform the required missions for a period of seven months. The flooding also damaged structures and facilities, including buildings in the historic Santa Margarita Ranch House complex, structures in the Chappo Area, and STP 3. A temporary bridge was erected on the site of the destroyed bridge to reestablish the north-south road network.

To prevent future damage to property and the disruption of essential operations, construction of flood control facilities is required. These facilities would protect Marine Corps assets within the 100-year floodplain of the Santa Margarita River. In addition, replacement of the temporary Basilone Road Bridge is required in order to provide reliable north-south access across the Santa Margarita River in the southeast portion of MCB Camp Pendleton. The bridge must withstand a 100-year flood event.

ALTERNATIVES CONSIDERED

In preparing the EIS for the projects, an alternatives screening analysis was performed. The selection criteria were based on the need to optimize hydraulic control, sediment control, channel maintenance, channel width, military mission, air station flight operations, timeliness, project cost, water resources and biological resources. These criteria are discussed in detail in Appendix C of the Final EIS.

A screening analysis of flood control options for the Santa Margarita River evaluated an in-stream levee, an upland levee, relocation of the air station, a concrete-lined channel, a soft bottom channel, and an on-base detention dam. A previous evaluation of an off-base dam/reservoir on De Luz Creek was also reconsidered. The concrete-lined channel, soft-bottom channel, upland levee, on-base detention and off-base detention alternatives, and the relocation of MCAS Camp Pendleton were eliminated.

Camp Pendleton Alternatives Eliminated

1. Upland Levee: An upland levee would have to be adjacent to the runways at the air station. This would violate air safety criteria and preclude routine air station operations.

2. Concrete-Lined Channel: The height of levees on a concrete channel would intrude into the flight path and violate airfield safety criteria and this alternative would result in significant adverse environmental impacts.

3. Soft-Bottom Channel: The soft-bottom channel would not eliminate the need for routine channel maintenance and would result in significantly adverse environmental impacts.

4. On-Base Detention Basins: Construction of on-Base basins would take an extensive amount of time to design and permit, delaying flood protection for the air station for an extended period of time. In addition, a basin would reduce downstream groundwater recharge and would adversely affect biological resources from both construction and inundation by water held in the dam.

5. Relocation of MCAS: The possibility of off-site alternatives on MCB Camp Pendleton was eliminated as infeasible based on the requirement that any relocation of MCAS Camp Pendleton must successfully accommodate safe air operations while minimizing impacts on the environment, local communities, military operations, and military and civilian airspace.

The proposed flood control project would protect approximately 800 developed acres that include numerous buildings and facilities, including MCAS Camp Pendleton. To relocate these facilities would require the dedication of 800 acres of land either on or off base. There would be potential significant impacts to listed species and habitat in this 800 acres. In comparison, the proposed project would permanently impact only 14.5 acres of habitat and 2.6 acres of jurisdictional wetlands. The proposed project would have much less impacts than relocating the facilities it would protect.

MCB Camp Pendleton operational siting constraints include potential interference with ordnance impact areas, ranges and ground training, amphibious, and aviation training activities. Important considerations include the air safety restrictions

associated with proximity to training ranges. The locations of these ranges would cause approach, departure, and pattern flight tracks to traverse restricted or hazardous airspace.

There are 33 training areas at MCB Camp Pendleton that are used for tactical exercise and field training, including cantonments, ordnance impact areas (41,850 acres), and maneuver training areas. A deficiency of live-fire ranges exists at MCB Camp Pendleton as addressed in the Land and Training Area Requirements for MCB Camp Pendleton.

MCB Camp Pendleton is the only location on the west coast where Marine Corps amphibious training operations can be combined with elements of aviation activities to develop, evaluate, and exercise the full range of combat techniques. Functions provided by the aviation combat element include air reconnaissance, anti-air warfare, assault support, offensive air support, electronic warfare, and control of aircraft and missiles. Training for all of these functions is supported by the restricted airspace and Military Operating Areas of MCB Camp Pendleton.

Air Installation Compatible Use Zone requirements are another major factor affecting the siting of MCAS Camp Pendleton. This program includes analyses of Airfield Accident Potential Zones, Noise Zone impacts, and Imaginary Surface obstructions. Underlying land uses must be compatible with these restrictions and requirements.

Other geographic restriction criteria exclude relocation of these facilities. There are limited areas of sufficient topography to accommodate relocating this facility. Other constraints include earthquake faults and steep topography. Direct seismic effects include ground shaking and ground rupture, while indirect effects include dynamic settlement, rock falls, and slope instability. Large areas in excess of five-percent slope are also a constraint in locating an alternative site for MCAS Camp Pendleton.

The Detailed Inventory of Naval Shore Facilities Report for MCAS Camp Pendleton reflects the Current Plant Value (the return for selling a particular building) as of September 30, 1995. The listed figure of $235,213,000 was adjusted to $336,213,000 to include construction between 1995 and 1999 which is underway. The costs to cover site preparation, utility infrastructure to the site and environmental mitigation was estimated at

$64,000,000. This total estimate of $400,000,000 covers only the 410 acres of the airfield area and does not cover the almost 400 acres of billeting, personnel support, maintenance, storage, office spaces and equipment parking located in the surrounding areas of Camp Pendleton which support the 3d Marine Aircraft Wing units that utilize the airfield. Current construction costs at MCAS Camp Pendleton and MCAS Miramar for the same type buildings shows that replacement costs would be significantly greater then the Current Plant Value used to evaluate this alternative. In comparison, the estimated cost of construction, mitigation, and maintenance of the flood control project is $21.3 million. Permanent all weather crossing of the Santa Margarita River would be required regardless of the location of MCAS Camp Pendleton. The total cost of relocating MCAS Camp Pendleton would be over 20 times the cost of the proposed projects.

Off Camp Pendleton Alternatives Eliminated

1. Off-Base Dam/Detention Basin: An off-Base detention dam would lengthen the time required to approve and construct flood protection, leaving MCB and MCAS Camp Pendleton unprotected for a longer period of time. In addition, the off-Base detention dam would reduce downstream groundwater recharge and would adversely affect biological resources from both construction and inundation by water held in the dam.

2. Relocation of MCAS: Off-Base relocation would include acquisition of property, personnel requirements, infrastructure requirements, and base operating costs. Relocating MCAS Camp Pendleton would include recreating the facilities needed for the 3,100 personnel and 160 helicopters currently assigned to MCAS Camp Pendleton. Additionally, as a result of the implementation of decisions by the Base Realignment and Closure (BRAC) Commission, two helicopter squadrons from MCAS Tustin and two helicopter squadrons from MCAS El Toro will be relocated to MCAS/MCB Camp Pendleton in 1999.

Marine Corps Bases/Air Stations are geographically positioned into interdependent complexes of supporting installations on the East Coast, West Coast, and in the Pacific. The major ground operational/tactical base on the West Coast is MCB Camp Pendleton. MCAS Camp Pendleton lies completely within the boundaries of MCB Camp Pendleton and allows for intense helicopter operations without the requirement for excessive transit time or flight within civil air space.

Other air stations within 200 air miles (near the upper-most range limits for the CH-46 helicopters) of MCAS/MCB Camp Pendleton are MCAS Miramar, Naval Air Facility (NAF) El Centro, Naval Air Station (NAS) North Island, and March Air Force Base (AFB).

In accordance with the approved recommendations of the Base Realignment and Closure Commission, MCAS Miramar will receive four additional helicopter squadrons and associated support operations. MCAS Miramar does not have the operational capacity or facilities to receive MCAS Camp Pendleton's existing 3,100 personnel, 160 rotary-wing aircraft with associated maintenance and administration support resources in six helicopter squadrons, and the four additional helicopter squadrons mandated by BRAC.

The primary purpose of NAF El Centro is to support transient aircraft using nearby ranges. However, the base was built in 1943 and has severely deteriorated; the hangars are substandard, maintenance facilities are insufficient, only one runway is operational, and the remaining runways are closed due to their deteriorated condition. Additionally, the distance, although less than 200 miles, is at the upper limits for the range of CH-46 helicopters, thus requiring refueling at Camp Pendleton to conduct operations and training in Camp Pendleton airspace. Utilization of this facility would require huge financial expenditures.

NAS North Island is located approximately one mile from Lindbergh Field (the major commercial airport in San Diego, California) and is adjacent to downtown San Diego. NAS North Island is considered fully utilized at present with almost no expansion capability. Further, training events such as helicopter touch and go and Ground Control Approach (GCA) could not be efficiently conducted.

March AFB is in the process of being converted to an Air Force Reserve Base and joint civilian use facility in accordance with the 1993 BRAC Commission's recommendations. The facilities are insufficient and could not facilitate Marine Corps operational requirements. Relocation to March AFB would require increased infrastructure, costs, manpower needs, and delays in training.

Discussion of these other alternative air station facilities that were considered but eliminated is contained in the Realignment to MCAS/MCB Camp Pendleton EIS (BRAC EIS) which is referenced in the

Final EIS for the current flood control and bridge replacement projects.

In addition to the infrastructure costs associated with relocating the MCAS on Camp Pendleton (if even possible), the relocation costs off-Base would include land acquisition. This would include replacing the approximately 800 acres, as well as other required replacements such as additional family housing, recreational facilities, commissaries and exchanges at the new location.

Proposed Levee Alternatives

The results of the screening analysis identified a levee and associated stormwater management system as the most feasible and least environmentally damaging flood control method. Three alternative levee alignments were identified and analyzed in detail in the Final EIS.

Levee Alignment 3, the preferred alternative, is a 14,500 foot-long levee and a 2,300 foot floodwall combination extending from STP 3 to just upstream of the Santa Margarita Ranch House Complex. With this alignment, minimum airfield safety distances along the length of MCAS Camp Pendleton would be maintained. The alignment would transition sharply toward and then run parallel to Vandegrift Boulevard downstream of the airfield for approximately 2,300 feet, and finally would be aligned to bulge out and around STP 3. The structure type would change from earthen levee to a floodwall along the 2,300 foot run parallel to Vandegrift Boulevard. This alignment would also include an upstream guide vane to the main levee. This vane would improve the hydraulics of the levee structure with respect to the impinging flow, and significantly reduce scour depths at the upstream end of the levee and the need for revetment protection. The guide vane would be constructed in the same manner as the levee and would result in a significantly smaller cumulative footprint and less potential impacts to riparian habitat than the training structures proposed with levee alignments 1 and 2.

Levee Alignment 1 is a 16,585 foot-long levee extending from STP 3 north to approximately 1,000 feet upstream of the Santa Margarita Ranch House Complex. This alternative would include three upstream flow training structures and shaving of the hillside upstream of Basilone Road Bridge. Minimum airfield safety distances along the length of the MCAS Camp Pendleton

airfield would be maintained. This levee alignment would be a smooth line between the west end of the airfield and STP 3.

Levee Alignment 2 is a 15,200 foot-long levee extending from STP 3 to just upstream of the Santa Margarita Ranch House Complex. This alternative would not include hillside shaving, but would incorporate six river training structures upstream of Basilone Road Bridge and several similar structures downstream of Basilone Road. This alignment would be identical to Levee Alignment 1 from STP 3 to the downstream side of Basilone Road. Minimum airfield safety distances along the length of the MCAS Camp Pendleton airfield would be maintained.

Construction of a levee would require a stormwater management system to drain surface runoff that becomes trapped behind the flood control structure. The system would need the capacity to manage runoff generated from approximately 2,100 acres during a 100-year storm event with a 24 hour duration. The stormwater system would collect stormwater and pump it back into the Santa Margarita River.

Two alternative stormwater management systems to accommodate surface runoff requirements associated with each levee alignment were analyzed in the Final EIS. For Levee Alignment 3, the preferred alternative, an existing inundation area would be used for temporary management and removal of stormwater through existing culverts under, and an earthen ditch parallel to Vandegrift Boulevard, and then discharge into the Santa Margarita River. The Stormwater Management System for levee alignments 1 and 2 would use the same existing inundation area as Levee Alignment 3, but an additional inundation area would be created behind the levee and used to manage stormwater runoff. The inundation areas used to manage stormwater for levee alignments 1 and 2 would necessitate smaller emergency pumps than those required for Levee Alignment 3.

Proposed Bridge Replacement Alternatives

A Camp Pendleton transportation planning analysis identified five alternatives for the replacement of Basilone Road Bridge. Construction of a suspension bridge was eliminated because it would violate airfield safety criteria and compromise the operational readiness of the air station. Construction of a new bridge at Hospital Road was eliminated because it would bisect critical training areas and would not be consistent with the

operational requirements of the base. The remaining three alternatives involve various alignments along Basilone Road. Each of these three alternatives is summarized below as bridge alignments A, B, and C.

Bridge Alignment A, the preferred alternative, will follow the existing alignment. With this alternative, the temporary Basilone Road Bridge will be replaced in its existing alignment providing a river channel width of approximately 1,155 feet over the newly constructed levee. The height of the new bridge will not cause an encroachment into the runway approach-departure clearance zone of the MCAS Camp Pendleton airfield; however, certain high profile vehicles (e.g., tractor-trailer trucks), will intrude into the approach-departure clearance zone. Traffic lights will be installed, which will be operated by the MCAS control tower, to control the flow of traffic on the bridge to prevent this encroachment during landings and take-offs of aircraft.

Bridge Alignment B is an east curve alignment. This alignment would begin at the existing Basilone Road alignment on the north bank of the river and curve to the east to avoid runway approach-departure clearance zone encroachment from traffic on the bridge. Bridge Alignment B would be slightly longer at 1,375 feet.

Bridge Alignment C, the Rattlesnake Canyon Road alignment, would construct a new roadway and bridge alignment. The bridge would be created about 1,200 feet northeast of the existing alignment and southwest of the existing intersection of Rattlesnake Canyon Road and Vandegrift Boulevard. With this alternative, a 2,000 foot-long bridge would be constructed and 2,500 feet of new roadway would be required on the north bank of the river.

A comparison of the three levee alternatives, three bridge alternatives, and two stormwater management alternatives is provided in Table 1.

Table 1. Comparision of alternatives.

Influencing Factor	Levee Alignment 3 Stormwater Management: Pumphouse		
	Bridge Alignment A -Existing Alignment	Bridge Alignment B - East Curve	Bridge Alignment C - Rattlesnake Canyon
Ground Disturbance - Permanent (acres)	25	25	27
Levee[A]	18	18	18
Spur Dikes/Silt Fences	0	0	0
Bridge Approaches (North & South, feet)	3,150	3,150	8,650
Ground Disturbance - Temporary (acres)	66	66	85
Levee	51	51	51
Spur Dikes/Silt Fences	0	0	0
Bridge and Roadway Approaches	15	15	34

Influencing Factor	Levee Alignment 1 Stormwater Management: Pumphouse		
	Bridge Alignment A -Existing Alignment	Bridge Alignment B - East Curve	Bridge Alignment C - Rattlesnake Canyon
Ground Disturbance - Permanent (acres)	67	67	69
Levee[A]	51	51	51
Spur Dikes/Silt Fences	9	9	9
Bridge Approaches (North & South, feet)	3,150	3,150	8,650
Ground Disturbance - Temporary (acres)	76	76	95
Levee	50	50	50
Spur Dikes/Silt Fences	11	11	11
Bridge and Roadway Approaches	15	15	34

Influencing Factor	Levee Alignment 2 Stormwater Management: Pumphouse		
	Bridge Alignment A -Existing Alignment	Bridge Alignment B - East Curve	Bridge Alignment C - Rattlesnake Canyon
Ground Disturbance - Permanent (acres)	41	41	43
Levee[A]	16	16	16
Spur Dikes/Silt Fences	10	10	10
Bridge Approaches (North & South,ft.)	3,150	3,150	8,650
Ground Disturbance - Temporary (acres)	75	75	94
Levee	44	44	44
Spur Dikes/Silt Fences	16	16	16
Bridge and Roadway Approaches	15	15	34

[A]Includes earthen levee, floodwall, guide vanes, roadway realignments, and hillside grading as they apply to each conceptual project alternative.

RATIONALE FOR THE PREFERRED ALTERNATIVE

The three alternative levee alignments and three alternative Basilone Road Bridge Replacement alignments were combined to provide nine project alternatives, which were evaluated in the Final EIS. The no action alternative was also evaluated. The preferred alternative (3A) combines Levee Alignment 3 and associated stormwater management system, and Bridge Alignment A.

Hydraulic and Sediment Transport Analyses, conducted in February 1997, at the request of the Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service, concluded that the proposed projects would not significantly alter the system-wide geomorphology and river mechanics of the Santa Margarita River. Project effects on flow depth, velocity, and sediment transport capacity would be minimal and predominantly confined to three areas within the project limits. Hydraulic and sediment transport effects upstream and downstream of the project area would be negligible.

Although levee Alignments 1 and 2 would have more favorable cost and engineering factors, Alignment 3 is the least damaging from an environmental perspective. The design of alternative 3 avoids and minimizes impacts to riverine habitats to the maximum extent practical. Differences between Alignment 3 and the other levee alternatives include elimination of proposed spur dikes and reconfiguration of the downstream portion of the levee to a floodwall along Vandegrift Boulevard. The preferred alternative represents a reduction of impacts to riverine habitat when compared with the other levee alternative alignments of 20 acres less direct permanent impact, 8.4 acres less direct temporary impact, and 48 acres less indirect impacts due to isolation of habitat. The preferred alternative has resulted in a reduced impact to Corps jurisdictional waters of the U.S. and wetlands by 7.8 acres less permanent impact, 4.2 acres less temporary impact, and 30.9 acres less impact associated with isolation of habitat.

Tables 2 and 3, respectively, show the permanent, temporary and isolation impacts of the levee and bridge alternatives. In all cases, levee Alignment 3 and Bridge Alternative A would result in lower impacts to habitat and wetlands than the other alternatives considered. The lower impacts to riparian habitat will translate to less impacts to Federally-listed endangered species and other riparian dependent species. Therefore, the preferred alternative would be consistent with the requirements of NEPA and the Clean

Water Act, is the least environmentally damaging, and is determined to be the environmentally preferred alternative.

Table 2. Comparison of Habitat and Wetland Impacts Associated with Alternative Levee Alignments.

Levee Alternative	Permanent Impacts (acres)		Temporary Impacts (acres)		Isolated acreage	
	Total Habitat	Wetlands	Total Habitat	Wetlands	Total Habitat	Wetlands
1	70.1	13.8	116.3	15.2	148	45.5
2	29.6	10.1	37.5	14.9	129	42.3
3	13	2.8	34.6	10.7	78.8	11.4

Acreage of wetland impacts is a subset of the acreage of total habitat impacts

Table 3. Comparison of Habitat and Wetland Impacts Associated with Alternative Bridge Alignments.

Bridge Alternative	Permanent Impacts (acres)		Temporary Impacts (acres)	
	Total Habitat	Wetlands	Total Habitat	Wetlands
A	1.5	0.3	2.1	0.6
B	3.7	0.8	4	1.3
C	5.8	1.2	7.5	3

Acreage of wetland impacts is a subset of the acreage of total habitat impacts.

MITIGATION

The lower Santa Margarita River is an intact riparian corridor ranging from 1,000 to 2,000 feet wide. The river corridor contains a mosaic of riparian and freshwater marsh habitats, but suffers from infestation by invasive, exotic weeds, primarily *Arundo donax*. The full suite of hydrologic, biogeochemical, and biologic riverine functions are performed at a level at or above most other rivers in southern California. The Santa Margarita River supports some of the largest known populations of the federally-listed endangered least Bell's vireo, southwestern willow flycatcher, and southwestern arroyo toad. Survey data from 1996 indicate the Santa Margarita River supports about 492 breeding pairs of vireo and 10 breeding pairs of flycatcher. Because the proposed project will be built in the floodplain of the Santa Margarita River, it will result in significant impacts

to wetlands, riparian habitat and endangered species. The following provides a discussion of how these impacts will be mitigated.

Impacts to Corps jurisdictional waters of the U.S. and wetlands (Table 4) would be mitigated by restoration of wetlands and riparian habitat at Ysidora Flats. This 90 acre area is within the floodplain of the Santa Margarita River, downstream of the proposed project site. Ysidora Flats were historically separated from the river by a series of berms and used for percolation and groundwater recharge. The percolation ponds were damaged during the flooding of 1993 and subsequently discontinued. The Marine Corps has removed the berms, restoring the hydrologic connection between the area previously encompassing the ponds and the river. The area has been recontoured, and will be subject to ongoing invasive weed control and revegetation with native riparian species. It is expected that most of Ysidora Flats will become Corps jurisdictional wetlands and the remainder will become non-jurisdictional floodplain riparian habitat. This area is being used to mitigate the impacts of the previously authorized air station expansion as well as the proposed project.

Table 4. Mitigation for Impacts to Corps Jurisdictional Waters of the U.S. and Wetlands.

TYPE OF IMPACT	ACREAGE OF IMPACT	MITIGATION AT YSIDORA		ON-SITE REVEGETATION		EXOTIC WEED CONTROL (per BO)	
		ratio	acres	ratio	acres	ratio	acres
All Permanent Impacts	2.6	3:1	7.8	0:1	0	10:1	26
Temporary Impacts to Freshwater Marsh	5.2	1:1	5.2	1:1[a]	5.2	1.11:1	5.9
Temporary Impacts to Riparian Woodland	5.1	1:1	5.1	1:1[b]	5.1	2:1	10.2
Temporary Impacts to Unvegetated Waters of U.S.	1	1:1	1	1:1[c]	1	0:1	0
Full Isolation Behind Levee (all habitat types)	4.5	1.5:1	6.8	0:1	0	0:1	0
Partial Isolation Behind Guide Vane	8.9	Monitored until after the first 10-year event. If impacts occur, mitigation would be 3:1 at Ysidora. If impacts do not occur, no mitigation would be required.					
TOTAL	25.3		25.9		11.1		42.1

a. revegetation would occur via natural recruitment
b. revegetation would occur via active planting
c. area would be recontoured to pre-construction conditions

All temporarily impacted areas, including wildlife habitat, wetlands and waters of the U.S., will be kept free of invasive exotic plant species for five years to allow natural revegetation. This mitigation scheme is based on the Final Wetland Mitigation Plan for BRAC Projects at the MCAS Camp Pendleton, which was published on September 8, 1997. Monitoring concerning wetlands mitigation will be in accordance with the provision of this Plan. Consultation shall take place, prior to construction, with the Regional Water Quality Control Board to determine any necessary changes in the National Pollution Discharge Elimination System/Section 401 general permit.

Mitigation ratios for impacts to Army Corps of Engineers jurisdictional areas are summarized in Table 4. The Marine Corps would mitigate for indirect impacts to non-Clean Water Act jurisdictional floodplain riparian habitat which would be isolated behind the levee by either restoring jurisdictional wetlands at Ysidora Flats at a 0.33:1 ratio or by restoring non-wetland riparian habitat at Ysidora Flats at a 0.5:1 ratio. This would translate, respectively, to 29 or 41 acres of restoration at Ysidora Flats to compensate for loss of function associated with floodplain isolation.

In addition to the mitigation required by the Army Corps of Engineers, the U.S. Fish and Wildlife Service Biological Opinion (BO) 1-6-95-F-02 of October 30, 1995, requires that permanent impacts to all habitat types (including Army Corps of Engineers jurisdictional areas) be mitigated by removal of invasive weeds from the Santa Margarita River at a 10:1 ratio. Temporary impacts must be mitigated by removal of invasive weeds at ratios ranging from 0.5:1 to 2:1 depending on the sensitivity of the habitat type being temporarily impacted. This BO fulfills compliance requirements under Section 7 of the Endangered Species Act. Monitoring for this mitigation will be accomplished as provided for in the BO.

Sensitive habitats will be properly delineated to determine construction zones and access roads. Lay-down areas will be located in disturbed or developed areas, and shall be fenced when adjacent to sensitive habitats. A qualified biologist shall monitor construction to insure there are no inadvertent impacts to sensitive species. To minimize impacts to arroyo southwestern toads during construction, exclosure fencing will be constructed around the footprint to a height minimum of 12 inches. In addition, surveys for this species and monitoring will be

conducted. No habitat will be cleared during the breeding season of the least Bell's vireo and the southwestern willow flycatcher (March 15 - August 31).

The Santa Margarita River Estuary will be monitored for sedimentation from construction activities. However, extensive hydrogeomorphic modeling performed for this project indicates that there should not be adverse downstream sedimentation effects. An erosion and sedimentation control plan will be prepared prior to construction.

Pre-construction surveys of biological resources and monitoring plans will be provided to the U.S. Fish and Wildlife Service. Pre-construction meetings with the U.S. Fish and Wildlife Service and the Army Corps of Engineers will be conducted relating to biological resources and to cultural resources. An upstream guide vane to mitigate the potential for turbulent flow conditions and associated erosion potential at the upstream end of the levee will be constructed as part of the preferred alternative. Monitoring of the jurisdictional wetlands and waters of the United States, partially isolated behind the guide vane, will be conducted for a minimum of five years, which must include a 10-year storm event.

Construction of the preferred alternative will require the disturbance of an archeological site eligible for listing on the National Register of Historic Places, and construction near the Santa Margarita Ranch House Complex which is listed on the National Register. Per 37 CFR 800.6(a), a Memorandum of Agreement executed on February 5, 1998, among the U.S. Marine Corps, California State Historic Preservation Office, Advisory Council on Historic Preservation, and the Pechanga and Pauma bands of the Luiseno Mission Indian Tribe has been implemented. This agreement provides for the preparation of an Historic Properties Treatment Plan to specify the treatment for each historic property, including archaeological sites and buildings, within the Area of Potential Effect. This Agreement completes Section 106 requirements of the National Historic Preservation Act.

PUBLIC INVOLVEMENT

Preparation of the EIS began with a public scoping process to identify issues that should be addressed in the document. Involvement in scoping was offered through a combination of

public announcements and meetings with federal and state regulatory agencies. A Notice of Intent (NOI) to prepare an EIS was published in the FEDERAL REGISTER on January 9, 1996. In addition, copies of the NOI and Notice of the Public Scoping Meeting were sent to federal, state, and local agencies, as well as other interested parties; to radio, television, and print media; and to libraries in the vicinity of MCB Camp Pendleton. Advertisements announcing the scoping meeting were placed in several local and regional newspapers and posted on the community calendars of local cable television companies. The scoping period was from January 9 to March 10, 1996. A public scoping meeting was held on January 25, 1996 to solicit comments and concerns on the proposed action from the general public. Comments received on the scoping process focused on alternatives to the proposed action, alternative designs of the levee, wetlands, water quality, biological resources, cultural resources, air quality, and hazardous material handling during construction. The Notice of Availability of the Draft EIS was published in the FEDERAL REGISTER on July 18, 1997. The review and comment period for the Draft EIS was from July 18, 1997, through September 5, 1997. A public hearing regarding the Draft EIS was conducted on August 13, 1997. Comments were received from 18 agencies and organizations that identified the following major concerns; relocation of facilities out of the floodplain, range and depth of alternatives, species and habitat types impacted, potential effects to archaeological sites, river hydrology and water quality, and wetlands. The Final EIS addressed issues raised in comments to the Draft EIS. The Notice of Availability of the Final EIS was published in the FEDERAL REGISTER on December 19, 1997. The Final EIS was distributed to federal, state, and local agencies, interested parties, and public libraries on December 19, 1997, and the comment period closed on January 19, 1998.

AGENCY DECISION

On behalf of the Department of the Navy and the U.S. Marine Corps, I have decided to implement the proposed action through the preferred alternative, Alternative 3A, (Levee Alignment 3 - A 14,500 foot-long levee and a 2,300 foot floodwall combination and Bridge Alignment A - Existing Alignment). The requirements of applicable Executive Orders have been considered. Specifically, the following determinations are made with respect to these Executive Orders:

Executive Order 11988, "Floodplain Management". I have determined that implementation of the Santa Margarita Flood Control Project is the only practicable alternative, consistent with law and policy, to avoid the potential severe consequences posed by potential significant flood events to existing multi-million dollar facilities at MCB Camp Pendleton and MCAS Camp Pendleton. All practicable means to avoid or minimize harm to the floodplain are included within those mitigation measures associated with the preferred alternative for this project.

Executive Order 11990, "Protection of Wetlands". I have determined that the preferred alternative is the least environmental damaging practicable alternative for the implementation of the Santa Margarita Flood Control Project. I have further determined that the preferred alternative incorporates all practicable measures to avoid or minimize adverse impacts to wetlands which may result from this project. In addition, all practicable mitigation measures to offset wetland impacts will be implemented. This determination includes consideration of, among other factors, the economic consequences and the potential impact upon the national security missions of MCB Camp Pendleton and MCAS Camp Pendleton posed by significant flood events within the Santa Margarita River.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations". The proposed action has been evaluated with respect to environmental and social impacts, as well as access to public information and an opportunity for public participation in the NEPA process as required by this Executive Order. The project is consistent with the goals and provisions of this Executive Order and no disproportionate impacts to minority or low-income populations will occur.

I have determined that the preferred alternative is the least environmentally damaging practical alternative for the implementation of the Santa Margarita flood control and bridge replacement projects. The Department of the Navy believes there are no remaining issues to be resolved with respect to these projects. Questions regarding the Final EIS prepared for this action may be directed to Mr. Lupe Armas, Assistant Chief of

Staff, Environmental Security, Marine Corps Base, Camp Pendleton, California, 92055, telephone (760) 725-3561.

2/6/98
Date

DUNCAN HOLADAY
Deputy Assistant Secretary of the Navy
(Installations and Facilities)